

CLAIMS

1. A vector useful for expressing a marker on a cell surface, comprising a nucleotide sequence encoding a fusion polypeptide, said fusion polypeptide comprising (a) a signal sequence; (b) a membrane attachment moiety; and (c) a marker, wherein said signal sequence, membrane attachment moiety and marker are operably linked in frame and wherein said vector lacks a transcriptional regulatory element (TRE) operably linked with said nucleotide sequence.

2. The vector of claim 1, wherein the membrane attachment moiety is a transmembrane domain.

3. The vector of any preceding claim, further comprising a nucleotide sequence for selection in mammalian cells.

4. The vector of any of claims 1-3, wherein the marker is an enzyme.

5. The vector of claim 4, wherein the enzyme is a restriction endonuclease.

6. The vector of any of claims 1-3, wherein the marker is a domain of an enzyme.

7. The vector of any of claims 1-3, wherein the marker is a subunit of an enzyme.

8. The vector of any of claims 1-3, wherein the marker is a proteinaceous member of a binding pair.

9. The vector of any of claims 1-3, wherein the marker is an epitope.

10. The vector of any of claims 1-3, further comprising a multiple cloning site.

11. A host cell comprising the vector of any of claims 1-3.

12. The host cell of claim 11, which is mammalian.

13. A kit comprising the vector of any of claims 1-3.

14. The kit of claim 13, further comprising a detection reagent.

15. A method for detecting expression of a reporter gene construct in a host cell, comprising:

detecting a marker encoded by the reporter gene construct, wherein the marker is associated with the cell surface, and wherein said reporter gene construct comprises a nucleotide sequence encoding a fusion polypeptide comprising a signal sequence, a membrane attachment moiety and a marker, said membrane attachment moiety heterologous

to said marker, and wherein said signal sequence, membrane attachment moiety and marker are operably linked in frame, and wherein said nucleotide sequence is operably linked to a transcriptional response element (TRE) which is functional in said host cell.

5 16. The method of claim 15, wherein the TRE is endogenous with respect to the host cell.

17. The method of claim 15, wherein the marker is not naturally associated with the host cell surface.

18. The method of claim 15, wherein the reporter gene construct is in a vector which is extrachromosomal.

10 19. The method of claim 15, wherein the reporter gene construct is integrated into a host cell chromosome.

20. The method of claim 15, wherein the marker is an enzyme.

21. The method of claim 20, wherein the enzyme is a restriction endonuclease.

22. The method of claim 15, wherein the marker is a domain of an enzyme.

15 23. The method of claim 15, wherein the marker is a subunit of an enzyme.

24. The method of claim 15, wherein the marker is a proteinaceous member of a binding pair.

25. A method of isolating a cell which expresses a marker on its surface, said marker expressed from a reporter gene construct comprising a nucleotide sequence encoding a fusion polypeptide comprising a signal sequence, a membrane attachment moiety and a marker, said membrane attachment moiety heterologous with respect to said marker, and wherein said signal sequence, membrane attachment moiety and marker are operably linked in frame, and wherein said nucleotide sequence is operably linked to a transcriptional response element (TRE) which is functional in said host cell, said method comprising

25 binding the marker to a binding partner which specifically binds to the marker to form a complex between the binding partner and the marker on the cell surface; and isolating the cells which contain the complex.

26. A method of detecting expression of a reporter gene construct encoding a marker which is associated with the cell surface, comprising:

30 binding the marker to a binding partner which specifically binds to the marker to form

a complex between the binding partner and the marker on the cell surface; and isolating the cells which contain the complex, wherein said marker is expressed from a reporter gene construct integrated into a chromosome of the host cell, said reporter gene construct comprising a nucleotide sequence encoding a fusion polypeptide comprising a signal
5 sequence, a membrane attachment moiety and a marker, said membrane attachment moiety heterologous with respect to said marker, and wherein said signal sequence, membrane attachment moiety and marker are operably linked in frame, and wherein said nucleotide sequence is operably linked to a transcriptional response element (TRE) which is functional in said host cell.

10 27. A method for detecting expression of a reporter gene construct in a host cell, comprising:

detecting a marker encoded by the reporter gene construct, wherein the marker is associated with the cell surface, and wherein said reporter gene construct comprises a nucleotide sequence encoding a fusion polypeptide comprising a signal sequence, a
15 membrane attachment moiety and a marker, and wherein said signal sequence, membrane attachment moiety and marker are operably linked in frame, and wherein said nucleotide sequence is operably linked to a transcriptional response element (TRE) which is functional in said host cell and wherein the TRE is heterologous with respect to the marker.

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